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90-PPB-90

Mr. Paul T. Day
Hanford Project Manager
U.S. Environmental Protection Agency
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Post Office Box 550
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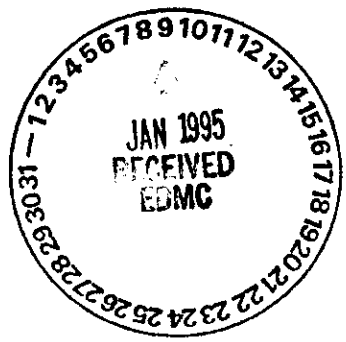

Mr. Timothy L. Nord
Hanford Project Manager
State of Washington
Department of Ecology
Mail Stop PV-11
Olympia, Washington 98504-8711

Dear Messrs. Day and Nord:

SIMULATED HIGH-LEVEL WASTE SLURRY TREATMENT/STORAGE CLOSURE PLAN REVISION

Enclosed for your approval is the revised closure plan for the Simulated High-Level Waste Slurry Treatment/Storage Facility. This version incorporates our response to your comments dated January 16, 1990; April 17, 1990; and April 25, 1990, on the Closure Plan, and appended Sampling and Analysis Plan and the Quality Assurance Plan. This submittal contains the following enclosures:

- Simulated High-Level Waste Slurry Treatment/Storage Closure Plan, Revision 5, and a revised Part A Application, Revision 1
- State Environmental Policy Act (SEPA) Checklist
- NOD Response Table

ENCLOSURE 2

NOTICE OF DEFICIENCY- RESPONSE TABLE

June 25, 1990

RESPONSES TO WASHINGTON DEPARTMENT OF ECOLOGY COMMENTS SIMULATED HIGH LEVEL WASTE TREATMENT AND STORAGE UNIT (SHLWS T/S) CLOSURE PLAN

ENCLOSURE 3

RESPONSES TO WASHINGTON DEPARTMENT OF ECOLOGY COMMENTS
SIMULATED HIGH LEVEL WASTE TREATMENT AND STORAGE UNIT (SHLWS T/S)
CLOSURE PLAN

The following is a summary of the DOE-RL/PNL response to Ecology comments dated April 17, 1990 and April 25, 1990 on the SHLWS T/S Closure Plan and Quality Assurance Plan. Details of the responses are provided in the attached revised Closure Plan. The comment number refers to the comment designation as identified in Ecology's original NODs dated January 16, 1990 and April 25, 1990.

OPEN COMMENTS AS LISTED IN ECOLOGY LETTER DATED APRIL 17, 1990

COMMENT NO.	PAGE	RESPONSE
8	4-6	**ECOLOGY COMMENT**: Unless additional data can be provided to confirm the statistical assumptions used in the design of this sampling plan (e.g., 5% drum-to-drum variability, normal distribution of waste constituents between drums), the last sentence of the second paragraph should be revised as follows: "The results of this sampling and analysis procedure indicate that the grouted wastes in each waste category are well below designation limits for EP toxicity and corrosivity." More precise statistical statements do not appear justified on the basis for only six samples from each waste category. In addition, the sentence "All samples were analyzed for both EP toxicity and pH," should be replaced with "All drums were analyzed..." These comments are meant to clarify the statistical significance of sampling results. Ecology does not intend that resampling of these drums should be undertaken. **RESPONSE**: Section 3.2 (paragraph 3)has been modified to reflect the suggested changes by Ecology.
13	6-11	**ECOLOGY COMMENT**: Section WAC 173-303-620(1)(c) states that "operators of facilities who are under contract with the state or federal government' are not exempt from the requirements of WAC 173-303-620. PNL is identified in the Part A for the SHLWS unit as an operator of the facility, and as such must submit

documentation of closure cost estimates, financial assurance, and liability coverage. As discussed in the April 10, 1990 Project Managers meeting, detailed closure cost estimates for closure of the SHLWS unit must be provided in this closure plan. Specific requirements for financial assurance and liability coverage are under discussion at the Project Managers level. Pending resolution of this issue, information regarding financial assurance and liability coverage need not be included in the SHLWS closure plan.

RESPONSE: It is the view of DOE/PNL that the financial requirements of WAC 173-303-620 do not apply to PNL. Insofar as the legal operating status of the facility includes both DOE-RL and PNL (as co-operator), and does not expressly recognize PNL as the sole operator of any RCRA waste facility, the government exemption applies. This view is consistent with 40 CFR 264.140 (c), which exempts states and the federal government from the financial requirements of 40 CFR 264, Subpart H.

21 A-6 **ECOLOGY COMMENT**: As noted in the previous NOD, this list of cleanup levels should be expanded to include all wastes which may designate under WAC 173-3-3-084, -101, -102, and -103. (i.e., persistent and carcinogenic as well as toxic wastes). The designation limit for IARC positive carcinogens is .01%, so the maximum cleanup level would be 10 ppm. The designation limit for halogenated hydrocarbons (HH) or polycyclic aromatic hydrocarbons (PAH) is also .01%, so the maximum cleanup level would be 10 ppm.

Ecology reiterates that the proposed list of cleanup levels (10% of the designation limit) is appropriate only for those constituents for which no other relevant cleanup levels exists. For example, under the proposed approach, the cleanup level for $NaNO^3$ (toxic category D) would be 10000 ppm. However, according to the "How Clean is Clean" guidance, the standard soil cleanup level for nitrate (as N) is 100 ppm (10 times the national drinking water standard in 40 CFR Part 141). Closure activities at SHLWS must ensure the following:

A. For constituents listed in WAC 173-303-081, -082, and -090, the closure performance standard is background. B. For constituents with specified soil cleanup levels in the "How Clean is Clean" guidance, the closure performance standard is the specified level or background. C. For those toxic,

carcinogenic, and persistent constituents not otherwise designated as characteristic or listed wastes, and for which there are not more stringent soil cleanup standards established, the following closure performance standards apply after final approval by Ecology:

CATEGORY	MAXIMUM ALLOWED CONCENTRATION
Toxic-X	1 ppm
Toxic-A	10 ppm
Toxic-B	100 ppm
Toxic-C	1000 ppm
Toxic-D	10000 ppm
Carcinogen	10 ppm
PAH	10 ppm
HH	10 ppm

RESPONSE: The recommendations of Ecology have been incorporated in substance in Section 2.3. The closure performance standards listed for Carcinogens and polynuclear aromatic hydrocarbons (PAH) should be 100 and 1000 ppm respectively, rather than 10 and 10 ppm respectively as noted in Ecology's comments.

22 A-9 **ECOLOGY COMMENT**: Tables 4 and 5 seem to contradict Table 7, stating that analysis of background soils for arsenic, cobalt, iron, lead, mercury, molybdenum, nickel, nitrate, potassium, selenium, sodium, strontium, and zirconium is not required. Tables 4 and 5 should be revised to clearly show all analyses that will be performed on background samples, waste management area soil samples, and decontamination waste samples.

RESPONSE: Tables 4 and 5 have been replaced by tables 5 and 6 (Section 3.1) showing all analysis that will be performed on background samples, waste management area soil samples, and decontamination waste samples.

23 A-9 **ECOLOGY COMMENT**: Data from XRF may only be used to demonstrate background cleanup in the waste management areas if the XRF detection limit is less than the mean background concentration (or the detection limit for ICP) for the primary metals associated with simulated high level slurry (e.g., cerium, dysprosium, iron, potassium, lanthanum, molybdenum, sodium, neodymium, zirconium). If any metals are found at concentrations greater than two standard deviations above mean background, then the soil from the locations should be removed and analyzed by ICP or AA, and soil below should then be analyzed using ICP or AA. XRF may be shown to be an

acceptable method for metals analysis at the SHLWS site if the ICP duplicates reveal that XRF consistently measures concentrations at or above those measured by ICP.

RESPONSE: The recommendations of Ecology have been incorporated in substance. Section 3.0 has been extensively modified to reflect these comments. The plan has also been modified to reflect a step wise plan to first agree on background levels for cleanup before closure has been initiated. In addition, no method for determination of background cleanup levels has been defined, pending analysis of the results of background sampling. A method will be proposed at the time the background sample data is forwarded to Ecology, taking advantage of the most recent information and recommendations of Hanford-wide efforts to define the appropriate statistical criteria for determining background cleanup levels. The approach being taken is consistent with other Hanford closure plans requiring cleanup to background levels.

29 A-14 **ECOLOGY COMMENT**: 1) Sampling at a single depth will be accepted for all waste management areas except the less-than-90-day dangerous waste storage area. In this area, because organic solvents have been stored there, soil samples will consist of samples from 3-9 inches deep and from 18-24 inches deep. Single depth samples from the remaining waste management areas shall be taken from 3-9 inches below the surface. 2) Visual inspection of soil profiles is not known to be a reliable indicator of contamination at concentrations near the proposed cleanup levels (two standard deviations above mean background). to improve the likelihood of detecting narrow bands of contamination near the surface, the closure plan must call for taking soils samples from 3-9 inches below the surface. 3) Volatile organics may be sampled by soil gas analysis in all waste management areas except the less-than-90-day dangerous waste storage area. In this area, because the occurrence of volatiles is more likely, soil gas analysis should be used to supplement soil sampling for volatile organics. Detection of organics at concentrations above the cleanup levels will necessitate soil removal, additional sampling, and revision of the closure plan.

RESPONSE: The essence of this recommend has been incorporated in Section 4.0

34 A-16 **ECOLOGY COMMENT**: If Ecology determines that local background for any hazardous constituents at the SHLWS T/S unit is much greater than for other areas of the Hanford Site, it will be necessary to amend the closure plan and to choose another area for background soil sampling. In addition, the closure plan should be revised to state that if the seven background samples have more than a 20% relative standard deviation in more than two constituents, then additional background samples will be taken.

RESPONSE: The comment has been incorporated in Section 4.0. The approach presented in Section 4.0 is consistent with other Hanford closure plans requiring cleanup to background levels.

35 A-18 **ECOLOGY COMMENT**: If, after removal of visible contamination, elevated levels (two standard variations above background) of an SHLWS metals or EP toxic metals are found in soils from the waste management areas, then additional sampling using a stratified random sampling approach will be required. Detection of these elevated levels in a waste management area would indicate that the assumption of equivalent variance between the two population s is incorrect. The closure plan must be revised to state that "if the results from sampling suggest that the variances of the two populations are not equal, resampling using a stratified random sampling approach will be required.

RESPONSE: The approach to sampling is dependent to some degree on the method for determination of background cleanup levels. The need for further (and type of) sampling will be addressed at the time a recommendation is made on the approach for determining background cleanup levels. The approach being taken is consistent with other Hanford closure plans requiring cleanup to background levels.

37 A-23 **ECOLOGY COMMENT**: Same as #29

RESPONSE: See response to comment No. 29.

ECOLOGY NOD DATED APRIL 25, 1990
ON THE SHLWS QUALITY ASSURANCE PROJECT PLAN (QAPjP)

COMMENT NO.	SECTION	RESPONSE
1	5.0	**ECOLOGY COMMENT**: QA objectives should include the numerical requirements for precision and accuracy. Section 5.0 merely presents a general discussion of the concepts. In addition to stating that precision will be determined by collection duplicate samples, an acceptable relative percent difference between field duplicates should be specified. **RESPONSE**: The QAPjP has been modified to include a numerical requirement for precision and accuracy (Percent Relative Difference).
2	5.4	**ECOLOGY COMMENT**: The definition of completeness is inadequate. A better definition of completeness would be, "the percentage of measurements planned which are judged to be valid." The success of the project might be jeopardized if the planned sampling was not completed. Section 5.4 should be changed accordingly. **RESPONSE**: Section 5.4 has been changed per the comment.
3	5.5	**ECOLOGY COMMENT**: The comparability of substitute analytical procedures cannot be established without a formal comparability study. Analyzing duplicates of 20% of the X-Ray Fluorescence (XRF) samples using SW-846 methods will not demonstrate the comparability of XRF results with outer established methods such as AA or ICP. Documentation should be provided that demonstrates that XRF will produce comparable results to ICP and AA under conditions similar to those at the SHLWS site. **RESPONSE**: The reference to using X-Ray Fluorescence to establish comparability has been deleted. Additional data has been provided in the Attachment to Appendix B comparing XRF results to USGS standards.
4	6.3	**ECOLOGY COMMENT**: The holding time limit for volatile organics is 14 days, not 20 days as stated in the QAPjP. Section 6.3 should be revised accordingly. **RESPONSE**: Section 6.3 has been revised to reflect a 14 day holding time for volatile organic samples.

If you have questions, please contact Mr. C. E. Clark of the U.S. Department of Energy, Richland Operations Office on (509) 376-9333 or Mr. H. W. Slater of the Pacific Northwest Laboratory on 376-0575.

Sincerely,

R. D. Izatt, Director
Environmental Restoration Division
Richland Operations Office

ERD:CEC

T. D. Chikalla, Director
Facilities and Operations
Pacific Northwest Laboratory

Enclosures:
1. SEPA Checklist
2. NOD Response Table
3. Simulated High-Level Waste Slurry Closure Plan, Revision 5

cc w/encls:
M. T. Gordon, Ecology
D. L. Duncan, EPA
W. J. Bjorklund, PNL
H. W. Slater, PNL